

## **815 KAR 20:084. Storage and installation of cross-linked polyethylene piping.**

RELATES TO: KRS 198B.050, 318.010, 318.015, 318.130, 318.150

STATUTORY AUTHORITY: KRS 198B.040(10), 318.130

NECESSITY, FUNCTION, AND CONFORMITY: KRS 318.130 requires the department, after review by the State Plumbing Code Committee, to promulgate an administrative regulation establishing the Kentucky State Plumbing Code regulating plumbing, including the methods and materials that may be used in Kentucky. This administrative regulation establishes the requirements for the storage, handling, and installation of standard dimension ratio (SDR) 9 cross-linked polyethylene pipe and fittings.

Section 1. Definitions. (1) "ASSE" means American Society of Sanitary Engineers.

(2) "ASTM" means American Society for Testing Materials.

(3) "PEX" means cross-linked polyethylene pipe.

(4) "PEX-AL-PEX" means polyethylene/aluminum/cross-linked polyethylene composite pressure pipe.

Section 2. Material. (1) PEX that is to be used for cold water only shall be produced and labeled as established by ASTM F-876.

(2) Cross-linked polyethylene (PEX) that is to be used for either cold water or hot water shall be produced and labeled as established by ASTM F-877.

(3) PEX-AL-PEX shall be produced and labeled as established by ASTM F-1281.

(4) Cold expansion fittings with PEX reinforcing rings for use with PEX tubing shall be produced and labeled as established by ASTM F-1960.

(5) Metal insert fittings utilizing a copper crimp ring shall be produced and labeled as established by ASTM F-1807.

(6) Stainless steel clamps substituted for the copper crimp ring shall be produced as established by ASTM F-2098.

(7) Plastic insert fittings for PEX shall be produced as established by ASTM F-2159.

(8) Push fit fittings for PEX shall be produced as established by ASSE 1061.

(9) Metal insert fittings for cross-linked polyethylene/aluminum/cross-linked polyethylene composite pressure pipe shall be produced as established by ASTM F-1974.

(10) Metal insert fittings utilizing a copper crimp ring for PEX-AL-PEX shall be produced as established by ASTM F-2434.

Section 3. Storage and Handling. (1) PEX shall not be stored where it will be exposed to direct or indirect ultraviolet light (sunlight).

(2)(a) PEX shall not be exposed to materials that affect the basic properties of cross-linked polyethylene, brass, or copper.

(b) Chemicals, pipe thread compounds, putty, and mineral or linseed oil compounds shall not contact the pipe.

Section 4. Installation. (1) Water Service Installation.

(a) Tubing shall be snaked in the ditch to allow for linear expansion and contraction.

(b) 1. Tubing shall not be installed in contaminated soils.

2. PEX shall not be installed in areas of known soil contamination or where there is a high risk of chemical spills such as organic solvents or petroleum distillates.

(c) Metallic fittings other than those consisting of red brass shall be protected from the soil to prevent corrosion.

- (d) The number of fittings shall be kept to a minimum.
- (e) The bottom of the trench shall be flat and free of rocks, hollows, or other sharp objects.
- (f) If placed in soil consisting of rock, piping shall be covered with six (6) inches of coarse sand or pea gravel.
- (g) If passing through a foundation wall, a rigid sleeve that spans the distance from within the wall out to the undisturbed soil shall be used to prevent shearing of the tubing.
- (2) Distribution System.
  - (a) If PEX is to be buried under a building, fittings shall not be used.
  - (b) PEX passing through a concrete slab or wall shall be protected by use of sleeves.
  - (c) PEX passing through metal studs or plates shall be protected by plastic grommets designed for this purpose.
  - (d) PEX shall not be used in operating conditions inconsistent with pressure ratings that appear on the tubing and the applicable ASTM standard.
  - (e) PEX shall not be installed:
    - 1. Where it may be exposed to direct or indirect ultraviolet light (sunlight);
    - 2. Where it may be exposed to open flame;
    - 3. With or exposed to petroleum based caulking or sealants;
    - 4. Where it may be subjected to prolonged exposure to free chlorine concentrations greater than four (4) ppm;
    - 5. Within twelve (12) inches of any recessed light fixture; or
    - 6. Within six (6) inches of any gas appliance metallic vent.
  - (f) PEX shall be tested under a pressure not to exceed 100 pounds per square inch nor less than forty (40) pounds per square inch.

Section 5. Hangers and Supports. (1) Cross-linked polyethylene (PEX) sizes one (1) inch and smaller installed horizontally shall be supported at intervals not to exceed thirty-two (32) inches.

(2) PEX sizes 1-1/4" and larger installed horizontally shall be supported at intervals not to exceed forty-eight (48) inches.

(3) PEX installed vertically shall be supported at the base of each story with a mid-story guide.

(4) PEX shall not be rigidly anchored but shall be installed to allow room for proper expansion and contraction of the tubing.

(5) Hangers or strapping shall be constructed of plastic material or be coated to prevent damage to the tubing.

(6) PEX-AL-PEX installed horizontally shall be supported at intervals not to exceed ninety-eight (98) inches.

(7) Cross-linked polyethylene/aluminum/cross-linked polyethylene installed vertically shall be supported at the base of each story with a mid-story guide. (42 Ky.R. 2688, 2898; eff. 6-22-2016.)